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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/683,610	10/10/2003	Katsuhiko Mikoshiba	13710-003001/PH-1852-US	1255

20985 7590 02/06/2006

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MINNEAPOLIS, MN 55440-1022

EXAMINER
KOLKER, DANIEL E

ART UNIT	PAPER NUMBER
1649	

DATE MAILED: 02/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/683,610	MIKOSHIBA ET AL.
	Examiner	Art Unit
	Daniel Kolker	1649

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 November 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *28-32* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) _____ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) *28-32* are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *5/21/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Applicant's remarks and amendments filed 2 November 2005 and 16 November 2005 have been entered. Claims 1 – 27 are canceled; claims 28 – 32 are pending.

2. The Art Unit location of your application in the USPTO has changed. To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to Art Unit 1649.

Election/Restrictions

3. Applicant's election without traverse of Group I in the reply filed on 2 November 2005 is acknowledged. Claims 28 – 32 are under examination.

Claim Objections

4. Claim 29 is objected to because of the following informalities: it depends from claim 1, which is canceled. Appropriate correction is required.

For the purposes of examination, the examiner has assumed that claim 29 depends from claim 28.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 28 – 30 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for proteins with the sequence of SEQ ID NO:1 or polypeptides consisting of residues 1 – 104 of SEQ ID NO:1, does not reasonably provide enablement for isolated polypeptides comprising SEQ ID NO:1 with 1 to 50 insertions, deletions, or substitutions. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims.

There are many factors considered when determining if the disclosure satisfies the enablement requirement and whether any necessary experimentation is undue. These factors include, but are not limited to: 1) nature of the invention, 2) state of the prior art, 3) relative skill of those in the art, 4) level of predictability in the art, 5) existence of working examples, 6) breadth of claims, 7) amount of direction or guidance by the inventor, and 8) quantity of experimentation needed to make or use the invention. *In re Wands*, 858 F.2d 731, 737, 8 USPQ2d 1400, 1404 (FED. Cir. 1988).

Claim 28, part(c), allows for a very large number of substitutions, deletions, or insertions within SEQ ID NO:1. SEQ ID NO:1 is 530 amino acids long. Thus the claim permits 9.4% of the amino acid residues to be deleted, inserted, or changed. The specification does not provide working examples, or even prophetic examples, of any proteins which fall within this genus. The nature of the invention, mutant IP3 receptor-binding proteins, is complex. The review article by Patel et al. (1999. Cell Calium 25:247-264) provides a broad overview of the complex nature of IP3 receptors and their role in cell physiology. The specification discloses that the interaction between SEQ ID NO:1 and the IP3 receptor is extraordinarily sensitive to even slight changes in amino acid sequence. For example, changing a single residue on the IP3 receptor can abrogate interaction between the two (see p. 36). However there is no disclosure of those amino acids on SEQ ID NO:1 which are crucial for the interaction. Thus in the absence of sufficient guidance, the skilled artisan would predict that such random mutations manifested in the IP3 binding domain of SEQ ID NO:1 would result in an inactive protein. In fact, the prior art teaches that predictions of protein function from the structure alone are very difficult; see Skolnick et al. (2000. Trends in Biotechnology 18:34-39), particularly p. 34, second column. Therefore the artisan would have to resort to trial and error experimentation in order to determine which regions of SEQ ID NO:1 are critical for binding IP3 receptors. Such a large degree of experimentation would be undue, given the breadth of the claims and the complex nature of the invention.

7. Claims 28 – 30 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. This is a written description rejection.

Claim 28 encompasses proteins with a very large number of substitutions, deletions, or insertions within SEQ ID NO:1. SEQ ID NO:1 is 530 amino acids long. Thus the claim permits 9.4% of the amino acid residues to be deleted, inserted, or changed. The specification does not provide working examples, or even prophetic examples, of any proteins which fall within this genus. Thus no members of the genus encompassed by part (c) of claim 28 have been described.

The protein with SEQ ID NO:1 is the only protein described in the specification. There are no other proteins which comprise residues 1 – 104 of SEQ ID NO:1; thus there is not sufficient written description of the genus of proteins encompassed by part (b) of claim 28. The instant disclosure of a single polypeptide, that of SEQ ID NO:1 with the inherent ability to bind to IP3, does not adequately support the scope of the claimed genus, which encompasses a substantial variety of subgenera. A genus claim may be supported by a representative number of species as set forth in *Regents of the University of California v Eli Lilly & Co,* 119F3d 1559, 1569, 43 USPQ2d 1398, 1406 (Fed. Cir. 1997), which states:

"To fulfill the written description requirement, a patent specification must describe an invention and do so in sufficient detail that one skilled in the art can clearly conclude that "the inventor invented the claimed invention". Lockwood v. American Airlines, Inc., 107 F.3d 1565, 1572, 41 USPQ2d 1961, 1966 (1997); In re Gosteli, 872 F.2d 1008, 1012, 10 USPQ2d 1614, 1618 (Fed. Cir. 1980) ("[T]he description must clearly allow persons of ordinary skill in the art to recognize that [the inventor] invented what is claimed.") Thus, an applicant complies with the written description requirement "by describing the invention, with all its claimed limitations, not that which makes it obvious," and by using "such descriptive means as words, structures, figures, diagrams, formulas, etc., that set forth the claimed invention." Lockwood, 107 F.3d 1565, 1572, 41 USPQ2d at 1966.

An adequate written description of a DNA product, "requires a precise definition, such as by structure, formula, chemical name, or physical properties," not a mere wish or plan for obtaining the claimed chemical invention. Fiers v. Revel, 984 F.2d 1164, 1171, 25 USPQ2d 1601, 1606 (Fed. Cir. 1993). Accordingly, "an adequate written description of a DNA requires more than a mere statement that it is part of the invention and reference to a potential method for isolating it; what is required is a description of the DNA [product] itself." Id at 1170, 25 USPQ2d at 1606." While the above quotation from Fiers is drawn to DNA products, the same logic applies to polypeptide products.

8. Claims 31 and 32 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the

relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. This is a new matter rejection.

Claim 31 and dependent claim 32 encompass compositions which comprise both SEQ ID NO:1 and a second protein, residues 1 – 104 of SEQ ID NO:1, both being detectably labeled. No proper antecedent basis can be found in the specification for this invention, and there is not evidence of conception of said invention within the specification, claims or drawings as originally filed. While the examiner can find support for compositions comprising SEQ ID NO:1 and an IP3 binding region of an IP3 receptor (see for example p. 16, first complete paragraph), there is not support for compositions comprising SEQ ID NO:1 and residues 1 – 104 of SEQ ID NO:1. In the supplemental amendment filed 16 November 2005, applicant did not indicate where support for these claims could be found. Thus the inclusion of this new invention in claims 31 and 32 constitutes new matter.

In response to this office action, applicant is invited to indicate the specific page and line numbers where support for this invention can be found.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 28 – 30 are rejected under 35 U.S.C. 102(b) as being anticipated by Hillman (U.S. Patent 5,854,023, issued 29 December 1998).

Hillman teaches the polypeptide of SEQ ID NO:1. Residues 1 – 500 from Hillman's SEQ ID NO:1 are identical to residues 31 – 530 from applicant's SEQ ID NO:1. Thus the prior art meets the structural limitations of element (c) of SEQ ID NO:28. Although Hillman is silent as to whether the prior art product is able to bind to an IP3 receptor, Hillman's polypeptides meet the structural limitations of the claims. However as the product is identical to the claimed product, it is assumed to have this inherent property absent evidence to the contrary. Hillman also calls SEQ ID NO:1 "SAHH" (see column 9 line 26 – 50) and teaches linking the protein to a detectable radioactive label (see column 36, lines 44 – 46). Thus Hillman also anticipates claims 29 and 30.

10. Claim 28 is rejected under 35 U.S.C. 102(b) as being anticipated by Hart (WO 98/14562, cited by applicant on IDS filed 21 May 2004).

Hart teaches the sequence set forth in Figure 1. Residues 85 – 614 of this sequence are identical to SEQ ID NO:1 from the instant application; thus the product meets the limitations of both parts (a) and (b) of claim 28.

11. Claim 28 is rejected under 35 U.S.C. 102(b) as being anticipated by Rosen et al (WO 00/55174, published 21 September 2000).

Rosen teaches SEQ ID NO:1379. Residues 86 – 189 of Rosen's protein are identical to residues 1 – 104 of SEQ ID NO:1, thereby meeting the limitation of claim 28.

12. Claims 28 – 31 are rejected under 35 U.S.C. 102(e) as being anticipated by Wu (WO 2004/030615, international filing date 29 September 2003, claiming benefit of U.S. Provisional application 60/414971, filed 2 October 2002).

Wu teaches SEQ ID NO:301, which is identical to applicant's SEQ ID NO:1. Wu also teaches labeling oligopeptides (i.e., polypeptides) by conjugating labels thereto, including fluorescent and radioactive labels (see p. 247 lines 19 – 23) meeting the limitations of claims 29 – 30. Wu also teaches compositions comprising the polypeptides (see text beginning on p. 299, line 24). Since a composition comprising SEQ ID NO:1 will necessarily contain molecules comprising residues 1 – 104 of SEQ ID NO:1, and Wu teaches labeling with a plethora of detectable labels, the prior art meets the limitations of claim 31.

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and

> the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 28 - 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wu (WO 2004/030615, international filing date 29 September 2003, claiming benefit of U.S. Provisional application 60/414971, filed 2 October 2002) and Nagai (2002. Nature Biotechnology 20:87 – 90).

As set forth in the rejection under 35 USC 102 above, Wu teaches SEQ ID NO:1, as well as methods of labeling proteins and compositions comprising the protein and thus anticipates claims 28 – 31. However, Wu does not teach green fluorescent protein (GFP), cyan fluorescent protein, yellow fluorescent protein (YFP), venus, or FlAsH.

Nagai teaches GFP, YFP, and Venus are suitable labels for proteins. Nagai also teaches the advantages of YFP, namely that it is acid-stable, and Venus, namely that it is tolerant of exposure to acidosis and chloride ions. It would have been obvious to one of ordinary skill in the art to select YFP or Venus as the detectable labels, with a reasonable expectation of success. The motivation to do so would be to increase the stability of the labels, thereby permitting the detection assay to be run over a wide range of conditions without need for further optimization.

Conclusion

14. No claim is allowed.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel Kolker whose telephone number is (571) 272-3181. The examiner can normally be reached on Mon - Fri 8:30AM - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Janet Andres can be reached on (571) 272-0867. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Daniel E. Kolker, Ph.D.
January 26, 2006

ROBERT C. HAYES, PH.D.
Primary **PATENT EXAMINER**

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                    GenCore version 5.1.6
           Copyright (c) 1993 - 2005  Compugen Ltd.

OM protein - protein search, using sw model

Run on:         December 14, 2005, 08:09:37 ; Search time 26.082 Seconds
                                         (without alignments)
                                         1751.988 Million cell updates/sec

Title:          US-10-683-610-1_COPY_1_104
Perfect score:  521
Sequence:       1 MSMPDAMPLPGVGEELKQAK..........SDDEVSPREKQQTNSKGSSN 104

Scoring table:  BLOSUM62
                Gapop 10.0 , Gapext 0.5

Searched:       2443163 seqs, 439378781 residues

Total number of hits satisfying chosen parameters:      2443163

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
                 Maximum Match 100%
                 Listing first 45 summaries

Database :       A_Geneseq_21:*
                1:  geneseqp1980s:*
                2:  geneseqp1990s:*
                3:  geneseqp2000s:*
                4:  geneseqp2001s:*
                5:  geneseqp2002s:*
                6:  geneseqp2003as:*
                7:  geneseqp2003bs:*
                8:  geneseqp2004s:*
                9:  geneseqp2005s:*

     Pred. No. is the number of results predicted by chance to have a
     score greater than or equal to the score of the result being printed,
     and is derived by analysis of the total score distribution.

                              SUMMARIES
                 %
Result           Query
  No.    Score   Match Length DB  ID                   Description
  ------------------------------------------------------------------------
    1      521   100.0    239  3  AAB56801             Aab56801 Human pro
    2      521   100.0    530  7  ADB68448             Adb68448 Human DCA
    3      521   100.0    530  7  ADB68450             Adb68450 Murine DC
    4      521   100.0    530  7  ADB68452             Adb68452 Murine DC
    5      521   100.0    530  7  ADB68446             Adb68446 Human DCA
    6      521   100.0    530  8  ADM94432             Adm94432 Mouse ino
    7      521   100.0    530  8  ABM80118             Abm80118 Tumour-as
    8      521   100.0    530  8  ADP23045             Adp23045 PRO polyp
    9      521   100.0    614  2  AAW56097             Aaw56097 Amino aci
   10      367    70.4    500  2  AAW90061             Aaw90061 Human SAH
   11      322    61.8    597  8  ADO43989             Ado43989 Amino aci
   12      295    56.6    611  8  ABM80935             Abm80935 Tumour-as
   13    288.5    55.4    455  4  ABG12029             Abg12029 Novel hum
   14      273    52.4    564  5  ABG32371             Abg32371 Novel hum
   15      268    51.4    508  8  ADS10638             Ads10638 Human the
   16      268    51.4    509  8  ADL90193             Adl90193 Human enz
   17    126.5    24.3    521  4  ABB58663             Abb58663 Drosophil
   18     86.5    16.6    414  2  AAW10529             Aaw10529 Saccharom
   19     86.5    16.6    414  4  AAB30809             Aab30809 Amino aci
   20       86    16.5    419  8  ADR86387             Adr86387 Aspergill
   21       86    16.5    446  8  ADR86528             Adr86528 Aspergill
   22       86    16.5    584  8  ADR86515             Adr86515 Aspergill
   23       85    16.3   1788  8  ADO17144             Ado17144 Novel exp
   24     83.5    16.0   2058  8  ADM48570             Adm48570 Ankyrin r
   25       83    15.9    628  8  ADS44146             Ads44146 Bacterial
   26       82    15.7   2296  8  ADN60280             Adn60280 Human spl
   27     81.5    15.6    428  5  ABG93245             Abg93245 C. albica
   28       81    15.5   1499  4  AAM42018             Aam42018 Human pol
   29       80    15.4    240  9  AEA28149             Aea28149 Sericin p
   30     79.5    15.3    156  3  AAB43709             Aab43709 Human can
   31     79.5    15.3    176  4  ABB71395             Abb71395 Drosophil
   32     79.5    15.3    220  7  ADC33148             Adc33148 Human nov
   33     79.5    15.3   1791  6  ABO52986             Abo52986 Human put
   34     79.5    15.3   2752  8  ADN60278             Adn60278 Human ser
   35     79.5    15.3   2752  8  ADP24102             Adp24102 PRO polyp
   36     79.5    15.3   2752  9  ADY91619             Ady91619 Human pro
   37       79    15.2    948  7  ADE34334             Ade34334 Retinobla
   38       79    15.2    948  8  ADK67723             Adk67723 Human mod
   39       79    15.2    948  8  ADK60419             Adk60419 Angiogene
   40       79    15.2    948  8  ADK60720             Adk60720 Angiogene
   41       79    15.2    948  8  ADP73343             Adp73343 Human ret
   42       79    15.2    948  8  ADR51525             Adr51525 Human lip
   43       79    15.2    948  9  ADX07074             Adx07074 Cyclin-de
   44       79    15.2    973  4  AAM41045             Aam41045 Human pol
   45       79    15.2   1278  4  AAM39259             Aam39259 Human pol

                              ALIGNMENTS

RESULT 1
AAB56801
ID   AAB56801 standard; protein; 239 AA.
XX
AC   AAB56801;
XX
DT   13-MAR-2001  (first entry)
XX
DE   Human prostate cancer antigen protein sequence SEQ ID NO:1379.
XX
KW   Human; prostate cancer; prostate cancer antigen; detection; diagnosis;
KW   neuroprotective; cytostatic; cardioactive; immunomodulatory; muscular;
KW   vulnerary; gastrointestinal; nephrotropic; antiinfective; gynaecological;
KW   antibacterial; gene therapy; neural; immune; reproductive; renal;
KW   gastrointestinal; pulmonary; cardiovascular; proliferative disorder;
KW   wound; infectious disease.
XX
OS   Homo sapiens.
XX
PN   WO200055174-A1.
XX
PD   21-SEP-2000.
XX
PF   08-MAR-2000; 2000WO-US005988.
XX
PR   12-MAR-1999;   99US-0124270P.
XX
PA   (HUMA-) HUMAN GENOME SCI INC.
PA   (ROSE/) ROSEN C A.
XX
PI   Rosen CA,  Ruben SM;
XX
DR   WPI; 2000-587513/55.
DR   N-PSDB; AAF16004.
XX
PT   Prostate cancer associated gene sequences, referred to as prostate cancer
PT   antigens, useful for treatment, prevention, and diagnosis of disorders
PT   such as prostate cancer.
XX
PS   Claim 11; Page 1803-1804; 2338pp; English.
XX
CC   AAF15566 to AAF16505 encode the human prostate cancer associated
CC   proteins, called prostate cancer antigens, given in AAB56363 to AAB57302.
CC   The prostate cancer antigens can have neuroprotective, cytostatic,
CC   cardioactive, immunomodulatory, muscular, vulnerary, gastrointestinal,
CC   nephrotropic, antiinfective, gynaecological and antibacterial activities,
CC   and can be used in gene therapy. The prostate cancer antigen
CC   polynucleotides may be used for detection of prostate cancer, chromosome
CC   identification, as chromosome markers, and for numerous other diagnostic
CC   or research purposes. The prostate cancer antigens may be used to treat
CC   disorders such as neural, immune, muscular, reproductive,
CC   gastrointestinal, pulmonary, cardiovascular, renal, and proliferative
CC   disorders, wounds, and infectious diseases. AAF16506 to AAF16514 to
CC   AAB57303 represent sequences used in the exemplification of the present
CC   invention
XX
SQ   Sequence 239 AA;

  Query Match             100.0%;  Score 521;  DB 3;  Length 239;
  Best Local Similarity   100.0%;  Pred. No. 5.1e-51;
  Matches  104;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MSMPDAMPLPGVGEELKQAKEIEDAEKYSFMATVTKAPKKQIQFADDMQEFTKFPTKTGR 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         86 MSMPDAMPLPGVGEELKQAKEIEDAEKYSFMATVTKAPKKQIQFADDMQEFTKFPTKTGR 145

Qy         61 RSLSRSISQSSTDSYSSAASYTDSSDDEVSPREKQQTNSKGSSN 104
              ||||||||||||||||||||||||||||||||||||||||||||
Db        146 RSLSRSISQSSTDSYSSAASYTDSSDDEVSPREKQQTNSKGSSN 189


RESULT 2
ADB68448
ID   ADB68448 standard; protein; 530 AA.
XX
AC   ADB68448;
XX
DT   04-DEC-2003  (first entry)
XX
DE   Human DCAL protein - SEQ ID 4.
XX
KW   dendritic cell expressed S-adenosyl homocysteine hydrolase-like molecule;
KW   DC; AHCY; DCAL; antiallergic; immunosuppressive; allergy; asthma;
KW   allergic rhinitis; systemic anaphylaxis; autoimmune; diabetes mellitus;
KW   rheumatoid arthritis; transplant rejection; vaccine; gene therapy; human.
XX
OS   Homo sapiens.
XX
FH   Key             Location/Qualifiers
FT   Domain          1. .106
FT                   /note = Hydrophilic domain
FT   Domain          107. .530
FT                   /note = adenosine-homocysteine hydrolase (AHCY)-like
FT                   domain
FT   Binding-site    318. .323
FT                   /note= "NAD+ binding motif (GXGXXG)"
XX
PN   WO2003055997-A1.
XX
PD   10-JUL-2003.
XX
PF   24-DEC-2002; 2002WO-AU001761.
XX
PR   24-DEC-2001; 2001AU-00009741.
XX
PA   (ORDE-) ORDER OF SISTERS OF MERCY IN QUEENSLAND.
XX
PI   Kato M,  Angel NZ,  Cooper BJ,  Hart DNJ;
XX
DR   WPI; 2003-559275/52.
DR   N-PSDB; ADB68445, ADB68447.
XX
PT   New dendritic cell expressed S-adenosyl homocysteine hydrolase-like
PT   molecule (DCAL) gene, useful for preparing a composition for treating or
PT   preventing a condition e.g., allergy, autoimmune disease or transplant
PT   rejection.
XX
PS   Disclosure; Fig 1B; 189pp; English.
XX
[illegible]   The invention relates to a novel isolated polynucleotide comprising a
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CC   dendritic cell (DC)-expressed S-adenosyl homocysteine hydrolase (AHCY)-
CC   like molecule (DCAL) gene. The polynucleotide of the invention
CC   demonstrates antiallergic and immunosuppressive activities and may be
CC   useful for treating a condition including an allergy such as asthma,
CC   allergic rhinitis or systemic anaphylaxis, an autoimmune disease such as
CC   diabetes mellitus or rheumatoid arthritis or transplant rejection.
CC   Furthermore, the polynucleotide may be useful as a vaccine or during gene
CC   therapy procedures. The genetically modified animal or the identified
CC   modulatory agent of the invention may be used in the study of immunity,
CC   DC function, brain physiology or neuronal cell function. The current
CC   sequence is that of the human DCAL protein (SEQ ID 4) of the invention
CC   which is encoded by the human DCAL cDNA.
XX
SQ   Sequence 530 AA;

  Query Match             100.0%;  Score 521;  DB 7;  Length 530;
  Best Local Similarity   100.0%;  Pred. No. 1.5e-50;
  Matches  104;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MSMPDAMPLPGVGEELKQAKEIEDAEKYSFMATVTKAPKKQIQFADDMQEFTKFPTKTGR 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MSMPDAMPLPGVGEELKQAKEIEDAEKYSFMATVTKAPKKQIQFADDMQEFTKFPTKTGR 60

Qy         61 RSLSRSISQSSTDSYSSAASYTDSSDDEVSPREKQQTNSKGSSN 104
              ||||||||||||||||||||||||||||||||||||||||||||
Db         61 RSLSRSISQSSTDSYSSAASYTDSSDDEVSPREKQQTNSKGSSN 104


RESULT 3
ADB68450
ID   ADB68450 standard; protein; 530 AA.
XX
AC   ADB68450;
XX
DT   04-DEC-2003  (first entry)
XX
DE   Murine DCAL protein - SEQ ID 6.
XX
KW   dendritic cell expressed S-adenosyl homocysteine hydrolase-like molecule;
KW   DC; AHCY; DCAL; antiallergic; immunosuppressive; allergy; asthma;
KW   allergic rhinitis; systemic anaphylaxis; autoimmune; diabetes mellitus;
KW   rheumatoid arthritis; transplant rejection; vaccine; gene therapy;
KW   murine; mouse.
XX
OS   Mus sp.
XX
FH   Key             Location/Qualifiers
FT   Binding-site    318. .323
FT                   /note= "NAD+ binding motif (GXGXXG)"
XX
PN   WO2003055997-A1.
XX
PD   10-JUL-2003.
XX
PF   24-DEC-2002; 2002WO-AU001761.
XX
PR   24-DEC-2001; 2001AU-00009741.
XX
PA   (ORDE-) ORDER OF SISTERS OF MERCY IN QUEENSLAND.
XX
PI   Kato M,  Angel NZ,  Cooper BJ,  Hart DNJ;
XX
DR   WPI; 2003-559275/52.
DR   N-PSDB; ADB68449.
XX
PT   New dendritic cell expressed S-adenosyl homocysteine hydrolase-like
PT   molecule (DCAL) gene, useful for preparing a composition for treating or
PT   preventing a condition e.g., allergy, autoimmune disease or transplant
PT   rejection.
XX
PS   Disclosure; Page 170-172; 189pp; English.
XX
CC   The invention relates to a novel isolated polynucleotide comprising a
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XX
DR   WPI; 2004-349314/33.
DR   N-PSDB; ADM94433.
XX
PT   New inositol 1,4,5-trisphosphate receptor-binding protein that binds to
PT   inositol 1,4,5-trisphosphate receptor, useful as inositol 1,4,5-
PT   trisphosphate indicator intracellularly and in cell-free system.
XX
PS   Claim 1; SEQ ID NO 1; 61pp; English.
XX
CC   The invention relates to a novel inositol 1,4,5-triphosphate (IP3)
CC   receptor-binding protein (I) that binds to IP3 receptor. (I) is used as
CC   an IP3 indicator in combination with a fluorescent molecule for detecting
CC   IP3 by the fluorescence resonance energy transfer (FRET) method using a
CC   combination of two fluorescent molecules applicable to the FRET method,
CC   and a protein containing at least IP3-binding domain of IP3 receptor
CC   labelled with the other fluorescent molecule. (I) is useful as IP3
CC   indicator intracellularly and in cell-free system, for detecting and/or
CC   quantifying IP3, as modulator of IP3-induced Ca2+ releasing activity,
CC   modulator of PIP2 function and Na2+ and bicarbonate ions. This sequence
CC   represents the IP3 receptor binding protein.
XX
SQ   Sequence 530 AA;

  Query Match             100.0%;  Score 2781;  DB 8;  Length 530;
  Best Local Similarity   100.0%;  Pred. No. 8.7e-268;
  Matches  530;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MSMPDAMPLPGVGEELKQAKEIEDAEKYSFMATVTKAPKKQIQFADDMQEFTKFPTKTGR 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MSMPDAMPLPGVGEELKQAKEIEDAEKYSFMATVTKAPKKQIQFADDMQEFTKFPTKTGR 60

Qy         61 RSLSRSISQSSTDSYSSAASYTDSSDDEVSPREKQQTNSKGSSNFCVKNIKQAEFGRREI 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 RSLSRSISQSSTDSYSSAASYTDSSDDEVSPREKQQTNSKGSSNFCVKNIKQAEFGRREI 120

Qy        121 EIAEQDMSALISLRKRAQGEKPLAGAKIVGCTHITAQTAVLIETLCALGAQCRWSACNIY 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        121 EIAEQDMSALISLRKRAQGEKPLAGAKIVGCTHITAQTAVLIETLCALGAQCRWSACNIY 180

Qy        181 STQNEVAAALAEAGVAVFAWKGESEDDFWWCIDRCVNMDGWQANMILDDGGDLTHWVYKK 240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        181 STQNEVAAALAEAGVAVFAWKGESEDDFWWCIDRCVNMDGWQANMILDDGGDLTHWVYKK 240

Qy        241 YPNVFKKIRGIVEESVTGVHRLYQLSKAGKLCVPAMNVNDSVTKQKFDNLYCCRESILDG 300
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        241 YPNVFKKIRGIVEESVTGVHRLYQLSKAGKLCVPAMNVNDSVTKQKFDNLYCCRESILDG 300

Qy        301 LKRTTDVMFGGKQVVVCGYGEVGKGCCAALKALGAIVYITEIDPICALQACMDGFRVVKL 360
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        301 LKRTTDVMFGGKQVVVCGYGEVGKGCCAALKALGAIVYITEIDPICALQACMDGFRVVKL 360

Qy        361 NEVIRQVDVVITCTGNKNVVTREHLDRMKNSCIVCNMGHSNTEIDVTSLRTPELTWERVR 420
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        361 NEVIRQVDVVITCTGNKNVVTREHLDRMKNSCIVCNMGHSNTEIDVTSLRTPELTWERVR 420

Qy        421 SQVDHVIWPDGKRVVLLAEGRLLNLSCSTVPTFVLSITATTQALALIELYNAPEGRYKQD 480
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        421 SQVDHVIWPDGKRVVLLAEGRLLNLSCSTVPTFVLSITATTQALALIELYNAPEGRYKQD 480

Qy        481 VYLLPKKMDEYVASLHLPSFDAHLTELTDDQAKYLGLNKNGPFKPNYYRY 530
              ||||||||||||||||||||||||||||||||||||||||||||||||||
Db        481 VYLLPKKMDEYVASLHLPSFDAHLTELTDDQAKYLGLNKNGPFKPNYYRY 530


RESULT 5
ABM80118
ID   ABM80118 standard; protein; 530 AA.
XX
AC   ABM80118;
XX
DT   18-NOV-2004  (first entry)
XX
DE   Tumour-associated antigenic target (TAT) polypeptide PRO80619, SEQ:301.
XX
KW   Tumour-associated antigenic target; TAT; human; overexpression; cancer;
KW   tumour; diagnosis; cell proliferative disorder; breast cancer;
KW   colorectal cancer; lung cancer; ovarian cancer; liver cancer;
KW   central nervous system cancer; bladder cancer; pancreatic cancer;
KW   cervical cancer; melanoma; leukaemia; hybridisation probe;
KW   chromosome identification; chromosome mapping; gene mapping;
KW   gene therapy; cytostatic.
XX
OS   Homo sapiens.
XX
PN   WO2004030615-A2.
XX
PD   15-APR-2004.
XX
PF   29-SEP-2003; 2003WO-US028547.
XX
PR   02-OCT-2002; 2002US-0414971P.
XX
PA   (GETH ) GENENTECH INC.
XX
PI   Wu TD,  Zhang Z,  Zhou Y;
XX
DR   WPI; 2004-347921/32.
DR   N-PSDB; ACN37426.
XX
PT   New tumor-associated antigenic target polypeptides and nucleic acids,
PT   useful in preparing a medicament for treating or detecting a
PT   proliferative disorder, e.g. breast, lung, colorectal, ovarian or
PT   prostate cancer or tumor.
XX
PS   Claim 12; SEQ ID NO 301; 7273pp; English.
XX
CC   The invention relates to human tumour-associated antigenic target (TAT)
CC   polypeptides, and their related nucleic acids. The TAT polypeptides are
CC   overexpressed in cancer tissues compared to normal tissues, and may thus
CC   serve as effective targets for the diagnosis and treatment of cancer in
CC   mammals. The invention also relates to nucleic acid and polypeptide
CC   sequences at least 80% identical to the TAT nucleic acids and
CC   polypeptides; expression vectors and host cells comprising a TAT nucleic
CC   acid; an antibody specific for a TAT polypeptide; a peptide or organic
CC   molecule which binds to a TAT polypeptide; fusion proteins comprising a
CC   TAT polypeptide; and methods and compositions for the treatment or
CC   diagnosis of cancer in mammals. TAT polypeptides, nucleic acids,
CC   antibodies, antagonists, binding molecules and compositions are useful
CC   for diagnosing or treating a cell proliferative disorder associated with
CC   increased TAT expression, particularly cancers such as breast cancer,
CC   colorectal cancer, lung cancer, ovarian cancer, liver cancer, bladder
CC   cancer, pancreatic cancer, cervical cancer, cancers of the central
CC   nervous system, melanoma and leukaemia. TAT nucleic acids may further be
CC   used as hybridisation probes, in chromosome and gene mapping, in
CC   chromosome identification and in gene therapy. The present sequence
CC   represents a TAT polypeptide of the invention
XX
SQ   Sequence 530 AA;

  Query Match             100.0%;  Score 2781;  DB 8;  Length 530;
  Best Local Similarity   100.0%;  Pred. No. 8.7e-268;
  Matches  530;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MSMPDAMPLPGVGEELKQAKEIEDAEKYSFMATVTKAPKKQIQFADDMQEFTKFPTKTGR 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MSMPDAMPLPGVGEELKQAKEIEDAEKYSFMATVTKAPKKQIQFADDMQEFTKFPTKTGR 60

Qy         61 RSLSRSISQSSTDSYSSAASYTDSSDDEVSPREKQQTNSKGSSNFCVKNIKQAEFGRREI 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 RSLSRSISQSSTDSYSSAASYTDSSDDEVSPREKQQTNSKGSSNFCVKNIKQAEFGRREI 120

Qy        121 EIAEQDMSALISLRKRAQGEKPLAGAKIVGCTHITAQTAVLIETLCALGAQCRWSACNIY 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        121 EIAEQDMSALISLRKRAQGEKPLAGAKIVGCTHITAQTAVLIETLCALGAQCRWSACNIY 180
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Qy        181 STQNEVAAALAEAGVAVFAWKGESEDDFWWCIDRCVNMDGWQANMILDDGGDLTHWVYKK 240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        181 STQNEVAAALAEAGVAVFAWKGESEDDFWWCIDRCVNMDGWQANMILDDGGDLTHWVYKK 240

Qy        241 YPNVFKKIRGIVEESVTGVHRLYQLSKAGKLCVPAMNVNDSVTKQKFDNLYCCRESILDG 300
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        241 YPNVFKKIRGIVEESVTGVHRLYQLSKAGKLCVPAMNVNDSVTKQKFDNLYCCRESILDG 300

Qy        301 LKRTTDVMFGGKQVVVCGYGEVGKGCCAALKALGAIVYITEIDPICALQACMDGFRVVKL 360
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        301 LKRTTDVMFGGKQVVVCGYGEVGKGCCAALKALGAIVYITEIDPICALQACMDGFRVVKL 360

Qy        361 NEVIRQVDVVITCTGNKNVVTREHLDRMKNSCIVCNMGHSNTEIDVTSLRTPELTWERVR 420
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        361 NEVIRQVDVVITCTGNKNVVTREHLDRMKNSCIVCNMGHSNTEIDVTSLRTPELTWERVR 420

Qy        421 SQVDHVIWPDGKRVVLLAEGRLLNLSCSTVPTFVLSITATTQALALIELYNAPEGRYKQD 480
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        421 SQVDHVIWPDGKRVVLLAEGRLLNLSCSTVPTFVLSITATTQALALIELYNAPEGRYKQD 480

Qy        481 VYLLPKKMDEYVASLHLPSFDAHLTELTDDQAKYLGLNKNGPFKPNYYRY 530
              ||||||||||||||||||||||||||||||||||||||||||||||||||
Db        481 VYLLPKKMDEYVASLHLPSFDAHLTELTDDQAKYLGLNKNGPFKPNYYRY 530

RESULT 6
ADP23045
ID   ADP23045 standard; protein; 530 AA.
XX
AC   ADP23045;
XX
DT   18-NOV-2004  (first entry)
XX
DE   PRO polypeptide SEQ ID NO:139.
XX
KW   PRO; antiinflammatory; antiarthritic; antirheumatic; immunosuppressive;
KW   osteopathic; antidiabetic; dermatological; antipsoriatic; antiallergic;
KW   antiasthmatic; hepatotropic; respiratory; gene therapy; immune system.
XX
OS   Unidentified.
XX
PN   WO2004041170-A2.
XX
PD   21-MAY-2004.
XX
PF   30-OCT-2003; 2003WO-US034312.
XX
PR   01-NOV-2002; 2002US-0423394P.
XX
PA   (GETH ) GENENTECH INC.
XX
PI   Clark H,  Schoenfeld J,  Van Lookeren M,  Williams PM,  Wood WI;
PI   Wu TD;
XX
DR   WPI; 2004-419628/39.
DR   N-PSDB; ADP23044.
XX
PT   New PRO polypeptides and polynucleotides, useful for treating e.g.
PT   erythematosus, rheumatoid arthritis, diabetes mellitus, immune-mediated
PT   renal disease, or demyelinating diseases of the central or peripheral
PT   nervous system.
XX
PS   Claim 7; SEQ ID NO 139; 2940pp; English.
XX
CC   The invention relates to a novel isolated nucleic acid and the PRO
CC   polypeptide encoded by it. A protein of the invention has
CC   antiinflammatory, antiarthritic, antirheumatic, immunosuppressive,
CC   osteopathic, antidiabetic, dermatological, antipsoriatic, antiallergic,
CC   antiasthmatic, hepatotropic, and respiratory activity. A polynucleotide
CC   of the invention may have a use in gene therapy. The PRO polypeptide, its
CC   agonist, antagonist, or antibody that specifically binds to the
CC   polypeptide is useful for treating an immune related disorder such as
CC   systemic lupus erythematosus, rheumatoid arthritis, osteoarthritis,
CC   juvenile chronic arthritis, a spondyloarthropathy, systemic sclerosis, an
CC   idiopathic inflammatory myopathy, Sjogren's syndrome, systemic
CC   vasculitis, sarcoidosis, autoimmune haemolytic anaemia, autoimmune
CC   thrombocytopenia, thyroiditis, diabetes mellitus, immune-mediated renal
CC   disease, a demyelinating disease of the central or peripheral nervous
CC   system, idiopathic demyelinating polyneuropathy, Guillain-Barre syndrome,
CC   a chronic inflammatory demyelinating polyneuropathy, a hepatobiliary
CC   disease, infectious or autoimmune chronic active hepatitis, primary
CC   biliary cirrhosis, granulomatous hepatitis, sclerosing cholangitis,
CC   inflammatory bowel disease, gluten-sensitive enteropathy, Whipple's
CC   disease, an autoimmune or immune-mediated skin disease, a bullous skin
CC   disease, erythema multiforme, contact dermatitis, psoriasis, an allergic
CC   disease, asthma, allergic rhinitis, atopic dermatitis, food
CC   hypersensitivity, urticaria, an immunologic disease of the lung,
CC   eosinophilic pneumonia, idiopathic pulmonary fibrosis, hypersensitivity
CC   pneumonitis, a transplantation associated disease, graft rejection or
CC   graft-versus-host disease. The present sequence represents a PRO protein
CC   of the invention.
XX
SQ   Sequence 530 AA;

  Query Match             100.0%;  Score 2781;  DB 8;  Length 530;
  Best Local Similarity   100.0%;  Pred. No. 8.7e-268;
  Matches  530;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MSMPDAMPLPGVGEELKQAKEIEDAEKYSFMATVTKAPKKQIQFADDMQEFTKFPTKTGR 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MSMPDAMPLPGVGEELKQAKEIEDAEKYSFMATVTKAPKKQIQFADDMQEFTKFPTKTGR 60

Qy         61 RSLSRSISQSSTDSYSSAASYTDSSDDEVSPREKQQTNSKGSSNFCVKNIKQAEFGRREI 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 RSLSRSISQSSTDSYSSAASYTDSSDDEVSPREKQQTNSKGSSNFCVKNIKQAEFGRREI 120

Qy        121 EIAEQDMSALISLRKRAQGEKPLAGAKIVGCTHITAQTAVLIETLCALGAQCRWSACNIY 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        121 EIAEQDMSALISLRKRAQGEKPLAGAKIVGCTHITAQTAVLIETLCALGAQCRWSACNIY 180

Qy        181 STQNEVAAALAEAGVAVFAWKGESEDDFWWCIDRCVNMDGWQANMILDDGGDLTHWVYKK 240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        181 STQNEVAAALAEAGVAVFAWKGESEDDFWWCIDRCVNMDGWQANMILDDGGDLTHWVYKK 240

Qy        241 YPNVFKKIRGIVEESVTGVHRLYQLSKAGKLCVPAMNVNDSVTKQKFDNLYCCRESILDG 300
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        241 YPNVFKKIRGIVEESVTGVHRLYQLSKAGKLCVPAMNVNDSVTKQKFDNLYCCRESILDG 300

Qy        301 LKRTTDVMFGGKQVVVCGYGEVGKGCCAALKALGAIVYITEIDPICALQACMDGFRVVKL 360
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        301 LKRTTDVMFGGKQVVVCGYGEVGKGCCAALKALGAIVYITEIDPICALQACMDGFRVVKL 360

Qy        361 NEVIRQVDVVITCTGNKNVVTREHLDRMKNSCIVCNMGHSNTEIDVTSLRTPELTWERVR 420
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        361 NEVIRQVDVVITCTGNKNVVTREHLDRMKNSCIVCNMGHSNTEIDVTSLRTPELTWERVR 420

Qy        421 SQVDHVIWPDGKRVVLLAEGRLLNLSCSTVPTFVLSITATTQALALIELYNAPEGRYKQD 480
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        421 SQVDHVIWPDGKRVVLLAEGRLLNLSCSTVPTFVLSITATTQALALIELYNAPEGRYKQD 480

Qy        481 VYLLPKKMDEYVASLHLPSFDAHLTELTDDQAKYLGLNKNGPFKPNYYRY 530
              ||||||||||||||||||||||||||||||||||||||||||||||||||
Db        481 VYLLPKKMDEYVASLHLPSFDAHLTELTDDQAKYLGLNKNGPFKPNYYRY 530

RESULT 7
AAW56097
ID   AAW56097 standard; protein; 614 AA.
XX
AC   AAW56097;
XX
DT   21-AUG-1998  (first entry)
XX
DE   Amino acid sequence of the 0DD4b5.3 enzyme.
XX
KW   DD4b9.3 enzyme; S-adenosyl-L-homocysteine hydrolase-type activity;
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              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 RSLSRSISQSSTDSYSSAASYTDSSDDEVSPREKQQTNSKGSSNFCVKNIKQAEFGRREI 120

Qy        121 EIAEQDMSALISLRKRAQGEKPLAGAKIVGCTHITAQTAVLIETLCALGAQCRWSACNIY 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        121 EIAEQDMSALISLRKRAQGEKPLAGAKIVGCTHITAQTAVLIETLCALGAQCRWSACNIY 180

Qy        181 STQNEVAAALAEAGVAVFAWKGESEDDFWWCIDRCVNMDGWQANMILDDGGDLTHWVYKK 240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        181 STQNEVAAALAEAGVAVFAWKGESEDDFWWCIDRCVNMDGWQANMILDDGGDLTHWVYKK 240

Qy        241 YPNVFKKIRGIVEESVTGVHRLYQLSKAGKLCVPAMNVNDSVTKQKFDNLYCCRESILDG 300
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        241 YPNVFKKIRGIVEESVTGVHRLYQLSKAGKLCVPAMNVNDSVTKQKFDNLYCCRESILDG 300

Qy        301 LKRTTDVMFGGKQVVVCGYGEVGKGCCAALKALGAIVYITEIDPICALQACMDGFRVVKL 360
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        301 LKRTTDVMFGGKQVVVCGYGEVGKGCCAALKALGAIVYITEIDPICALQACMDGFRVVKL 360

Qy        361 NEVIRQVDVVITCTGNKNVVTREHLDRMKNSCIVCNMGHSNTEIDVTSLRTPELTWERVR 420
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        361 NEVIRQVDVVITCTGNKNVVTREHLDRMKNSCIVCNMGHSNTEIDVTSLRTPELTWERVR 420

Qy        421 SQVDHVIWPDGKRVVLLAEGRLLNLSCSTVPTFVLSITATTQALALIELYNAPEGRYKQD 480
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        421 SQVDHVIWPDGKRVVLLAEGRLLNLSCSTVPTFVLSITATTQALALIELYNAPEGRYKQD 480

Qy        481 VYLLPKKMDEYVASLHLPSFDAHLTELTDDQAKYLGLNKNGPFKPNYYRY 530
              ||||||||||||||||||:|||||||||||||||||||||||||||||||
Db        481 VYLLPKKMDEYVASLHLPTFDAHLTELTDDQAKYLGLNKNGPFKPNYYRY 530

RESULT 9
AAW90061
ID   AAW90061 standard; protein; 500 AA.
XX
AC   AAW90061;
XX
DT   04-MAR-1999  (first entry)
XX
DE   Human SAHH protein.
XX
KW   S-adenosyl-5-homocysteine hydrolase; SAHH; human; drug screening;
KW   treatment; infection; cancer; autoimmune disease; detection; diagnosis;
KW   gene mapping; antisense; therapy; antagonist; immunoassay.
XX
OS   Homo sapiens.
XX
PN   US5854023-A.
XX
PD   29-DEC-1998.
XX
PF   17-JUL-1997;   97US-00896005.
XX
PR   17-JUL-1997;   97US-00896005.
XX
PA   (INCY-) INCYTE PHARM INC.
XX
PI   Shah P,  Lal P,  Hillman JL,  Corley NC;
XX
DR   WPI; 1999-094906/08.
DR   N-PSDB; AAV73924.
XX
PT   Nucleic acid encoding human S-adenosyl-5-homocysteine hydrolase - for
PT   production of recombinant enzyme, useful for diagnosis, treatment and
PT   prevention of cancers, infections and autoimmune diseases.
XX
PS   Claim 1; Fig 1A-I; 40pp; English.
XX
CC   This sequence represents a human S-adenosyl-5-homocysteine hydrolase
CC   (SAHH). The SAHH protein can be used to generate specific antibodies and
CC   in drug screening to identify specific binding agents. Antagonists of the
CC   protein are used to treat or prevent a wide range of viral, bacterial,
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CC   fungal, parasitic, protozoal or helminthic infections, many cancers
CC   (leukaemia, lymphoma or solid tumours), and many autoimmune diseases
CC   (e.g. acquired immune deficiency syndrome, allergy, asthma, diabetes
CC   mellitus, multiple sclerosis etc). All these conditions may be treated by
CC   expressing antisense sequences, triplex-forming agents or ribozymes
CC   directed against the nucleic acid. The nucleic acid and its fragments can
CC   be used as probes or primers for detecting and quantifying gene
CC   expression, for diagnosis or monitoring of disease, to identify genetic
CC   variations, mutations or polymorphisms, in gene mapping and as antisense
CC   therapeutics. Antibodies are used directly as antagonists, indirectly to
CC   deliver active agents to SAHH-expressing cells, to diagnose and monitor
CC   diseases in standard immunoassays, in competitive drug screens and to
CC   isolate the protein from natural sources
XX
SQ   Sequence 500 AA;

  Query Match             94.1%;  Score 2618;  DB 2;  Length 500;
  Best Local Similarity   99.8%;  Pred. No. 1.5e-251;
  Matches  499;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;

Qy         31 MATVTKAPKKQIQFADDMQEFTKFPTKTGRRSLSRSISQSSTDSYSSAASYTDSSDDEVS 90
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MATVTKAPKKQIQFADDMQEFTKFPTKTGRRSLSRSISQSSTDSYSSAASYTDSSDDEVS 60

Qy         91 PREKQQTNSKGSSNFCVKNIKQAEFGRREIEIAEQDMSALISLRKRAQGEKPLAGAKIVG 150
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 PREKQQTNSKGSSNFCVKNIKQAEFGRREIEIAEQDMSALISLRKRAQGEKPLAGAKIVG 120

Qy        151 CTHITAQTAVLIETLCALGAQCRWSACNIYSTQNEVAAALAEAGVAVFAWKGESEDDFWW 210
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        121 CTHITAQTAVLIETLCALGAQCRWSACNIYSTQNEVAAALAEAGVAVFAWKGESEDDFWW 180

Qy        211 CIDRCVNMDGWQANMILDDGGDLTHWVYKKYPNVFKKIRGIVEESVTGVHRLYQLSKAGK 270
              |||||||||||||||||||||||||||| |||||||||||||||||||||||||||||||
Db        181 CIDRCVNMDGWQANMILDDGGDLTHWVCKKYPNVFKKIRGIVEESVTGVHRLYQLSKAGK 240

Qy        271 LCVPAMNVNDSVTKQKFDNLYCCRESILDGLKRTTDVMFGGKQVVVCGYGEVGKGCCAAL 330
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        241 LCVPAMNVNDSVTKQKFDNLYCCRESILDGLKRTTDVMFGGKQVVVCGYGEVGKGCCAAL 300

Qy        331 KALGAIVYITEIDPICALQACMDGFRVVKLNEVIRQVDVVITCTGNKNVVTREHLDRMKN 390
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        301 KALGAIVYITEIDPICALQACMDGFRVVKLNEVIRQVDVVITCTGNKNVVTREHLDRMKN 360

Qy        391 SCIVCNMGHSNTEIDVTSLRTPELTWERVRSQVDHVIWPDGKRVVLLAEGRLLNLSCSTV 450
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        361 SCIVCNMGHSNTEIDVTSLRTPELTWERVRSQVDHVIWPDGKRVVLLAEGRLLNLSCSTV 420

Qy        451 PTFVLSITATTQALALIELYNAPEGRYKQDVYLLPKKMDEYVASLHLPSFDAHLTELTDD 510
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        421 PTFVLSITATTQALALIELYNAPEGRYKQDVYLLPKKMDEYVASLHLPSFDAHLTELTDD 480

Qy        511 QAKYLGLNKNGPFKPNYYRY 530
              ||||||||||||||||||||
Db        481 QAKYLGLNKNGPFKPNYYRY 500

RESULT 10
AD043989
ID   AD043989 standard; protein; 597 AA.
XX
AC   AD043989;
XX
DT   15-JUL-2004  (first entry)
XX
DE   Amino acid sequence of human putative S-adenosylhomocysteinase.
XX
KW   protein complex; neurological disease; stroke; neurodegeneration;
KW   Wallerian degeneration; Alzheimer's disease; neurological disorder;
KW   epilepsy; inflammatory condition; ulcerative colitis; Crohn's disease;
KW   atherosclerosis; 1D-MYO-inositol triphosphate 3 kinase A; ASK1; ASK2;
KW   ASK3; CaMKII beta; CaMKII delta; CaMKII gamma; casein kinase II alpha;
KW   Cdc37; CHK2; CTCL tumour antigen SE20-4; EF-1 alpha 1; EMAP;
KW   AHCY-type activity; stimulation; inhibition; dendritic cell; cancer;
KW   autoimmune disease; transplantation.
XX
OS   Homo sapiens.
XX
PN   WO9814562-A1.
XX
PD   09-APR-1998.
XX
PF   06-OCT-1997;   97WO-NZ000133.
XX
PR   04-OCT-1996;   96NZ-00299507.
XX
PA   (HART/) HART D N J.
XX
PI   Hart DNJ;
XX
DR   WPI; 1998-240074/21.
DR   N-PSDB; AAV28617.
XX
PT   New isolated S-adenosyl-L-homocysteine hydrolase enzyme - is used to
PT   develop products which can be used in the treatment of e.g. auto-immune
PT   disease, transplantations or cancers.
XX
PS   Claim 3; Fig 1; 33pp; English.
XX
CC   This is the amino acid sequence of the DD4b9.3 enzyme which has S-
CC   adenosyl-L-homocysteine hydrolase (AHCY)-type activity. Its products can
CC   be used to identify substances which have a stimulatory or inhibitory
CC   effect on the enzyme activity. Such substances can be used to modulate
CC   dendritic cell (DC) function and for immunomodulation. They can be used
CC   in the treatment of e.g. autoimmune diseases, transplantations or
CC   cancers. The products can also be used for detection and diagnosis
XX
SQ   Sequence 614 AA;

  Query Match             100.0%;  Score 2781;  DB 2;  Length 614;
  Best Local Similarity   100.0%;  Pred. No. 1.1e-267;
  Matches  530;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MSMPDAMPLPGVGEELKQAKEIEDAEKYSFMATVTKAPKKQIQFADDMQEFTKFPTKTGR 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         85 MSMPDAMPLPGVGEELKQAKEIEDAEKYSFMATVTKAPKKQIQFADDMQEFTKFPTKTGR 144

Qy         61 RSLSRSISQSSTDSYSSAASYTDSSDDEVSPREKQQTNSKGSSNFCVKNIKQAEFGRREI 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        145 RSLSRSISQSSTDSYSSAASYTDSSDDEVSPREKQQTNSKGSSNFCVKNIKQAEFGRREI 204

Qy        121 EIAEQDMSALISLRKRAQGEKPLAGAKIVGCTHITAQTAVLIETLCALGAQCRWSACNIY 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        205 EIAEQDMSALISLRKRAQGEKPLAGAKIVGCTHITAQTAVLIETLCALGAQCRWSACNIY 264

Qy        181 STQNEVAAALAEAGVAVFAWKGESEDDFWWCIDRCVNMDGWQANMILDDGGDLTHWVYKK 240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        265 STQNEVAAALAEAGVAVFAWKGESEDDFWWCIDRCVNMDGWQANMILDDGGDLTHWVYKK 324

Qy        241 YPNVFKKIRGIVEESVTGVHRLYQLSKAGKLCVPAMNVNDSVTKQKFDNLYCCRESILDG 300
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        325 YPNVFKKIRGIVEESVTGVHRLYQLSKAGKLCVPAMNVNDSVTKQKFDNLYCCRESILDG 384

Qy        301 LKRTTDVMFGGKQVVVCGYGEVGKGCCAALKALGAIVYITEIDPICALQACMDGFRVVKL 360
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        385 LKRTTDVMFGGKQVVVCGYGEVGKGCCAALKALGAIVYITEIDPICALQACMDGFRVVKL 444

Qy        361 NEVIRQVDVVITCTGNKNVVTREHLDRMKNSCIVCNMGHSNTEIDVTSLRTPELTWERVR 420
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        445 NEVIRQVDVVITCTGNKNVVTREHLDRMKNSCIVCNMGHSNTEIDVTSLRTPELTWERVR 504

Qy        421 SQVDHVIWPDGKRVVLLAEGRLLNLSCSTVPTFVLSITATTQALALIELYNAPEGRYKQD 480
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        505 SQVDHVIWPDGKRVVLLAEGRLLNLSCSTVPTFVLSITATTQALALIELYNAPEGRYKQD 564

Qy        481 VYLLPKKMDEYVASLHLPSFDAHLTELTDDQAKYLGLNKNGPFKPNYYRY 530
              ||||||||||||||||||||||||||||||||||||||||||||||||||
Db        565 VYLLPKKMDEYVASLHLPSFDAHLTELTDDQAKYLGLNKNGPFKPNYYRY 614

RESULT 8
ADB68452
ID   ADB68452 standard; protein; 530 AA.
XX
AC   ADB68452;
XX
DT   04-DEC-2003  (first entry)
XX
DE   Murine DCAL protein - SEQ ID 8.
XX
KW   dendritic cell expressed S-adenosyl homocysteine hydrolase-like molecule;
KW   DC; AHCY; DCAL; antiallergic; immunosuppressive; allergy; asthma;
KW   allergic rhinitis; systemic anaphylaxis; autoimmune; diabetes mellitus;
KW   rheumatoid arthritis; transplant rejection; vaccine; gene therapy;
KW   murine; mouse.
XX
OS   Mus sp.
XX
FH   Key             Location/Qualifiers
FT   Binding-site    318. .323
FT                   /note= "NAD+ binding motif (GXGXXG)"
XX
PN   WO2003055997-A1.
XX
PD   10-JUL-2003.
XX
PF   24-DEC-2002; 2002WO-AU001761.
XX
PR   24-DEC-2001; 2001AU-00009741.
XX
PA   (ORDE-) ORDER OF SISTERS OF MERCY IN QUEENSLAND.
XX
PI   Kato M,  Angel NZ,  Cooper BJ,  Hart DNJ;
XX
DR   WPI; 2003-559275/52.
DR   N-PSDB; ADB68451.
XX
PT   New dendritic cell expressed S-adenosyl homocysteine hydrolase-like
PT   molecule (DCAL) gene, useful for preparing a composition for treating or
PT   preventing a condition e.g., allergy, autoimmune disease or transplant
PT   rejection.
XX
PS   Disclosure; Page 175-177; 189pp; English.
XX
CC   The invention relates to a novel isolated polynucleotide comprising a
CC   dendritic cell (DC)-expressed S-adenosyl homocysteine hydrolase (AHCY)-
CC   like molecule (DCAL) gene. The polynucleotide of the invention
CC   demonstrates antiallergic and immunosuppressive activities and may be
CC   useful for treating a condition including an allergy such as asthma,
CC   allergic rhinitis or systemic anaphylaxis, an autoimmune disease such as
CC   diabetes mellitus or rheumatoid arthritis or transplant rejection.
CC   Furthermore, the polynucleotide may be useful as a vaccine or during gene
CC   therapy procedures. The genetically modified animal or the identified
CC   modulatory agent of the invention may be used in the study of immunity,
CC   DC function, brain physiology or neuronal cell function. The current
CC   sequence is that of the murine DCAL protein (SEQ ID 8) of the invention
CC   which is encoded by cDNA.
XX
SQ   Sequence 530 AA;

  Query Match             99.9%;  Score 2778;  DB 7;  Length 530;
  Best Local Similarity   99.8%;  Pred. No. 1.7e-267;
  Matches  529;  Conservative    1;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MSMPDAMPLPGVGEELKQAKEIEDAEKYSFMATVTKAPKKQIQFADDMQEFTKFPTKTGR 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MSMPDAMPLPGVGEELKQAKEIEDAEKYSFMATVTKAPKKQIQFADDMQEFTKFPTKTGR 60

Qy         61 RSLSRSISQSSTDSYSSAASYTDSSDDEVSPREKQQTNSKGSSNFCVKNIKQAEFGRREI 120
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